

**Claims****1. A control system comprising**

- control means and
- a user interface,

5 said user interface comprising means for

- communication of control signals from a user to said control means,  
said user interface being adaptive.

**2. A control system according to claim 1, wherein said user interface comprises**

10 • motion detection means (MDM),

- output means (OM) and
- adaptation means (AM) adapted for

- receipt of motion detection signals (MDS) obtained by said motion detection means (MSM),

15 ○ establishing an interpretation frame on the basis of said motion detection signals (MDS) and

- establishing and outputting communication signals (CS) to said output means (OM) on the basis of said motion detection signals (MDS) and said interpretation frame.

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3. A control system according to claim 1 or 2, wherein said user interface comprises signal processing means or communicates with motion detection means (MDM) determining the obtained signal differences by comparison with the signals obtained when establishing said interpretation frame.

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4. A control system according to any of the claims 1 – 3, wherein said user interface is distributed.

5. A control system according to any of the claims 1 – 4, wherein said motion detection means MDM comprise a set of motion detection sensors (SEN1, SEN2...SENn).
- 5 6. A control system according to any of the claims 1 – 5, wherein said set of motion detection sensors (SEN1, SEN2...SENn) are exchangeable.
7. A control system according to any of the claims 1 – 6, wherein said set of motion detection sensors (SEN1, SEN2...SENn) forms a motion detection means (MDM)
- 10 10 combined by at least two motion detection sensors (SEN1, SEN2...SENn) and where the individual motion detection sensor may be exchanged with another motion detection sensor.
8. A control system according to any of the claims 1 – 7, wherein said set of motion
- 15 15 detection sensors (SEN1, SEN2...SENn) comprises at least two different types of motion detection sensors.
9. A control system according to any of the claims 1 – 8, wherein said motion detection means (MDM) may be optimized by a user to the intended purpose by
- 20 20 exchanging or adding motion detection sensors (SEN1, SEN2,...SENn), preferably by means of at least two different types of motion detection sensors (SEN1, SEN2...SENn).
10. A control system according to any of the claims 1 – 9, wherein said at least two
- 25 25 different types of motion detection sensors (SEN1, SEN2...SENn) are mutually distinguishable.
11. A control system according to any of the claims 1 – 10, wherein said user interface comprises remote control means.

12. A control system according to any of the claims 1 – 11, wherein said motion detection sensors (SEN) are driven by rechargeable batteries.
13. A control system according to any of the claims 1 – 12, wherein said motion detection means (MDM) comprise a sensor tray (ST) for holding said motions detection sensors (SEN1, SEN2...SENn).  
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14. A control system according to any of the claims 1 – 13, wherein said sensor tray (ST) comprises means for recharging said motion detection sensors (SEN1, SEN2...SENn).  
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15. A control system according to any of the claims 1 – 14, wherein said motion detection signals (MDS) are transmitted by means of wireless communication.  
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16. A control system according to any of the claims 1 – 15, wherein said communication signals (CS) are transmitted by means of establishing wireless communication.  
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17. A control system according to any of the claims 1 – 16, wherein said wireless communication exploits the Bluetooth technology.  
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18. A control system according to any of the claims 1 – 17, wherein said wireless communication exploits wireless network technology.
19. A control system according to any of the claims 1 – 18, wherein said wireless communication exploits wireless broadband technology.  
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20. A control system according to any of the claims 1 – 19, wherein said wireless communication exploits UMTS technology.

21. A control system according to any of the claims 1 – 20, wherein said control signals represent control commands.
22. A control system according to any of the claims 1 – 21, wherein said control signals represent information.
23. A control system according to any of the claims 1 – 22, wherein said user interface comprises motion detection means.
- 10 24. A control system according to any of the claims 1 – 23, wherein said motion detection means are touch-less.
25. A control system according to any of the claims 1 – 24, wherein said user interface comprises mapping means.
- 15 26. A control system according to any of the claims 1 – 25, wherein said user interface comprises calibration means.
27. A control system according to any of the claims 1 – 26, wherein said control means comprise means for communicating said signals to at least one output medium.
- 20 28. A control system according to any of the claims 1 – 27, wherein said mapping means comprise predefined mapping tables.
- 25 29. A control system according to any of the claims 1 – 28, wherein said mapping means comprise user-defined mapping tables.
- 30 30. A control system according to any of the claims 1 – 29, wherein said mapping means comprise at least two mapping tables.

31. A control system according to any of the claims 1 – 30, wherein said mapping means comprise at least two mapping tables and a common control mapping table.
32. A control system according to any of the claims 1 – 31, wherein said mapping means comprise motion learning means.
  - 5 33. A control system according to any of the claims 1 – 32, wherein said motion learning means comprise means for testing and validating new motions.
- 10 34. A control system according to any of the claims 1 – 33, wherein said motion detection means comprise at least one sensor.
35. A control system according to any of the claims 1 – 34, wherein said at least one sensor is an infrared sensor.
  - 15 36. A control system according to any of the claims 1 – 35, wherein said at least one sensor is an optical sensor.
  37. A control system according to any of the claims 1 – 36, wherein said optical sensor is a CCD-based sensor.
    - 20 38. A control system according to any of the claims 1 – 37, wherein said optical sensor is a digital camera.
  - 25 39. A control system according to any of the claims 1 – 38, wherein said optical sensor is a digital video camera
  40. A control system according to any of the claims 1 – 39, wherein said optical sensor is a web camera.
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41. A control system according to any of the claims 1 – 40, wherein said at least one sensor is an ultrasound sensor.
42. A control system according to any of the claims 1 – 41, wherein said at least one sensor is a laser sensor.
43. A control system according to any of the claims 1 – 42, wherein said at least one sensor is an electro-magnetic wave sensor.
- 10 44. A control system according to any of the claims 1 – 43, wherein said motion detection means comprise at least two different kinds of sensors.
45. A control system according to any of the claims 1 – 44, wherein said at least two different kinds of sensors are used simultaneously.
- 15 46. A control system according to any of the claims 1 – 45, wherein said at least two different kinds of sensors have different labels.
47. A control system according to any of the claims 1 – 46, wherein said at least two different kinds of sensors have different shapes.
- 20 48. A control system according to any of the claims 1 – 47, wherein said at least two different kinds of sensors have different sizes.
- 25 49. A control system according to any of the claims 1 – 48, wherein said at least one sensor is wireless.
50. A control system according to any of the claims 1 – 49, wherein said at least one sensor is driven by batteries.

51. A control system according to any of the claims 1 – 50, wherein said batteries are rechargeable.
52. A control system according to any of the claims 1 – 51, wherein said user interface comprises at least one holder for at least one of said at least one sensor.
53. A control system according to any of the claims 1 – 52, wherein said holder comprises means for recharging said batteries.
- 10 54. A control system according to any of the claims 1 – 53, wherein said holder comprises differently labelled slots for said at least two different kinds of sensors.
55. A control system according to any of the claims 1 – 54, wherein said holder comprises differently shaped slots for said at least two different kinds of sensors.
- 15 56. A control system according to any of the claims 1 – 55, wherein said holder comprises differently sized slots for said at least two different kinds of sensors.
57. A control system according to any of the claims 1 – 56, wherein said at least one sensor comprises means for wireless data communication.
- 20 58. A control system according to any of the claims 1 – 57, wherein said means for wireless communication comprise a network interface.
- 25 59. A control system according to any of the claims 1 – 58, wherein said network interface comprises protocols of the TCP/IP type.
60. A control system according to any of the claims 1 – 59, wherein said calibration means comprise means for calibration of a reference position.

61. A control system according to any of the claims 1 – 60, wherein said calibration of a reference position is predefined.
62. A control system according to any of the claims 1 – 61, wherein said calibration of a reference position is performed automatically.  
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63. A control system according to any of the claims 1 – 62, wherein said calibration of a reference position is performed manually.
- 10 64. A control system according to any of the claims 1 – 63, wherein said calibration of a reference position is performed for each sensor individually.
65. A control system according to any of the claims 1 – 64, wherein said calibration means comprise means for calibration of active range.  
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66. A control system according to any of the claims 1 – 65, wherein said calibration of the active range is predefined.
67. A control system according to any of the claims 1 – 66, wherein said calibration of the active range is performed manually.  
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68. A control system according to any of the claims 1 – 67, wherein said calibration of the active range is performed automatically.
- 25 69. A control system according to any of the claims 1 – 68, wherein said control system comprises means for automatic decision of which sensors to use.
70. A control system according to any of the claims 1 – 69, wherein said motion detection sensors are permanently positioned on walls.  
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71. Use of the control system of claim 1 – 70 in a rehabilitation system.

72. Use of the control system of claim 1 – 70 for data analysis system.

73. Use of the control system of claim 1 – 70 in a remote control system.

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74. Use in a remote control system according to claim 73 for controlling an intelligent room.

75. Use of the control system of claim 1 – 70 for interactive entertainment.

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76. Use for interactive entertainment according to claim 75, wherein said interactive entertainment comprises virtual reality interactivity.

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77. Use of the control system of claim 1 – 70 for controlling three-dimensional models.

78. Use of the control system of claim 1 – 70 in learning systems.

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79. Motion detector comprising a set of partial detectors of different types with respect to detection characteristics.

80. Motion detector according to claim 79, wherein the motion detector is adaptive.

81. Motion detector for use in a system according to any of the claims 1 to 80.

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